Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077
TEL: 281-870-8822EMAIL:Sales@DynamicEngineers.com

OCXO3315C
Low power high-strength miniature OCXO

Features and Benefits

Very small sizes
Ultra low power consumption: 0.23W at +25°C
Very high mechanical strength: to up 500G, 1 ms shocks
Vibration 30G to 2000Hz sine
High frequency stability: to ± 10 ppb over -40°C to 85°C
Fast warming up: to 60s –typical, 30s – optionally
Operational frequency range: 8 – 100 MHz

Description

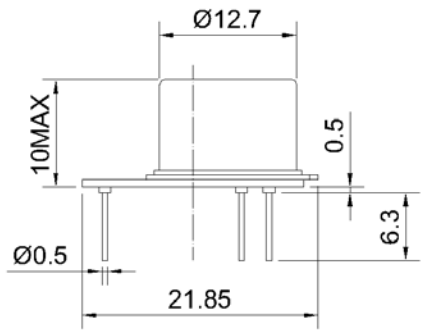
The OCXO3315C series uses the internal heating resonator (IHR) technology with arrangement of the whole oven system together with the crystal plate inside the TO-8 vacuum holder. Such approach results in radical reduction of the OCXO sizes, power consumption and its warm-up time providing at that excellent temperature stability, low phase-noise and 0.1ppb/day aging.

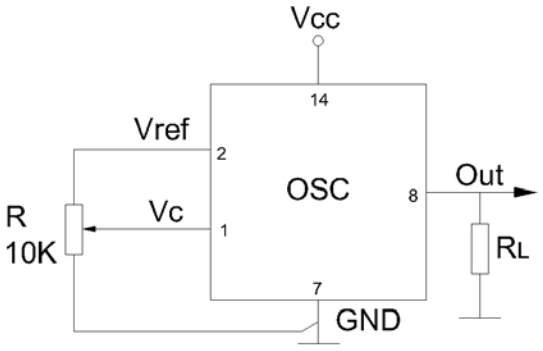
Typical Applications

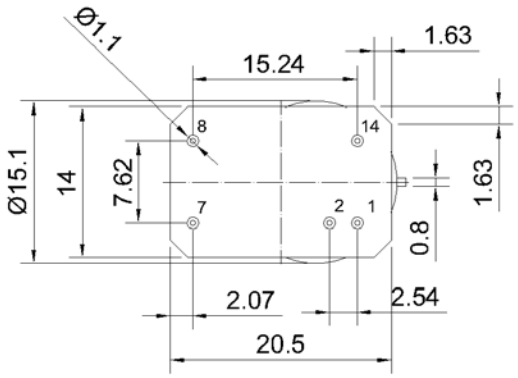
Portable and battery fed wireless
Mobile test equipment
Beacons & Rescue systems
Equipment working at severe mechanical factors

Mechanical Drawing & Pin Connections

Drawing No: MD140029-1







Pin	Signal
1	Electrical tuning
2	Reference voltage
7	GND
8	RF Out
14	+V Supply

Unit : mm

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Specifications

OCXO Specification		Sym	Condition	Value Min.	Value Typ.	Value Max.	Unit	Note
Frequency Range		F_0		8		100	MHz	
RF Output								
HCMOS (TTL) Option	Load			10			Kohm	
						15	pF	
	H-Level Voltage	V_H	Vcc=5V	3.8			V	
			Vcc=3.3V	2.4				
	L-Level Voltage	V_L				0.4	V	
	Duty Cycle			45		55	%	
	Rise/Fall Time					10	ns	For 10MHz operational frequency
Sine Wave Option	Level	L			+8		dBm	
	Load	R_L		45	50	55	Ohm	
	Harmonics Level					-25	dBc	
Sub-harmonics Level				None				
Power Supply								
Voltage		Vcc		4.75	5.0	5.25	V	3.3V available
Power Consumption			Steady-state@+25°C		0.23		W	
			Warm-up		1.0		W	
Warm-up Time			To△f/f=1e-7, at 25°C,Vcc=5V	30	60		s	Ref. frequency after 15 min. for 10MHz
			To△f/f=1e-7, at 25°C,Vcc=3.3V	40	70		s	
Frequency Control								
Control Voltage		Vc	Vcc=5V	0		4.2	V	Tuning slop-positive
			Vcc=3.3V	0		2.8	V	
Tuning Range				+/-0.5	+/-1		ppm	
Reference Voltage		Vref	Vcc=5V	4.1	4.2	4.5	V	
			Vcc=3.3V	2.7	2.8	2.9	V	
Frequency Stability								
Vs. Operating Temperature Range			-30°C to +70°C		+/-50		ppb	See ordering section
Vs. Supply Voltage Change			Ref. Vcc typ.		+/-2		ppb	
Vs. Acceleration			Worst direction	+/-0.5		+/-1	ppb/G	
Aging	Per Day		After 30 days of operation		+/-0.5		ppb	See ordering section
	Per Year				+/-0.05		ppm	
Phase Noise								
Phase Noise			@1Hz	-97/-	-95		dBc/Hz	For 10MHz/100MHz operational frequency
			@10Hz	-130/-95	-125/-90			
			@100Hz	-152/-125	-145/-120			
			@1KHz	-162/-155	-155/-150			
			@10KHz	-165/-165	-162/-162			
Environmental								
Operating Temperature Range		See ordering section						
Storage Temperature Range		-60°C to +90°C						
Humidity		Non-condensing 95%						
Mechanical Shock		Per MIL-STD-202, 500G half sine pulse, 1ms						
Vibration		Per MIL-STD-202, 30G swept sine 10 to 2000Hz						
Soldering Conditions		260°C 10s						

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Ordering Information

OCXO3315C	-	x	x	x	x	x	-	xx MHz
Group		1	2	3	4	5		

For example, OCXO3315C- -26421-10MHz denotes the OCXO has the following specifications:

Temperature Range	-10°C to +60°C
Stability Over Temperature	±100ppb
Aging per day / year	1.5ppb / 0.15ppm
Supply Voltage	3.3V ±10%
Output	HCMOS
Frequency	10MHz

1	**Temperature Range**
Code	Specification
1	0°C..+50°C
2	-10°C..+60°C
3	0°C..+70°C
4	-20°C..+70°C
5	-30°C..+70°C
6	-40°C..+85°C
7	-55°C..+85°C

2	**Stability Over Temperature**		
Code	Specification	Available temperature range code	
		10MHz	100MHz
1	±5.0 ppb	1 to 2	-
2	±10 ppb	1 to 7	-
3	±20 ppb	1 to 7	1
4	±30 ppb	1 to 7	1 to 2
5	±50 ppb	1 to 7	1 to 7
6	±100 ppb	1 to 7	1 to 7

3	**Aging per day/year, ppb/ppm**	
Code	Specification	
1	0.3/0.03	≤10MHz
2	0.5/0.05	≤20MHz
3	1/0.1	≤40MHz
4	1.5/0.15	≤50MHz
5	2/0.2	≤100MHz
6	3/0.3	
7	5/0.5	

4	**Supply voltage**
Code	Specification
1	+5V ±5%
2	+3.3V ±5%

5	**Output**
Code	Specification
1	HCMOS
2	Sine wave +8 dBm typ.

**with same numbers and frequency upper limits for a give daily / yearly aging rate
*Disclaimer: Not all option choices available across entire frequency range